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ABSTRACT

Writing to Read (WTR) is a computer-based instructional system designed to develop writing and reading skills of students in the primary grades. Evaluation of the WTR program in West Virginia was conducted with kindergarten students only. Thirty-one kindergartens in five counties were involved in the evaluation study as the treatment group, receiving WTR instruction. Twenty-seven classrooms served as the control group not receiving WTR instruction. Test results were analyzed using the Statistical Analysis System computer program. Results on the spelling and writing tests indicated that all treatment groups in each subject in each county scored higher than the control groups; however, reading test results indicated that WTR instruction seemed to have made little difference. Participating teachers' opinions were sought and compiled to gain additional evaluation information. Results of the questionnaire indicated the treatment group teachers rated the WTR program is more effective than the control group teachers rated their reading program. The WTR program instruction has proven itself effective in the areas of spelling and writing for kindergarten students in the five West Virginia counties taking part in the project. (Three tables of data are included. Seven appendixes include: WTR Validation, Spelling Tests Used in the National Evaluation of WTR, Instructions, Directions and Criteria for Collecting and Scoring Writing Samples, and Teacher Questionnaires.) (MG)

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"WRITING TO READ" EVALUATION REPORT

West Virginia Project

for School Year 1988/89

ED325844

by

Donna Adkins

Lincoln County School District

Hamlin West Virginia

June 1989

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Background

In the fall of 1988 the Appalachian Regional Commission and the IBM Corporation combined their resources and energy to install "Writing to Read" (WTR) labs at thirteen sites in West Virginia and forty-two sites in Kentucky. This report concerns only the West Virginia part of the project.

The Appalachia Education Laboratory in Charleston, West Virginia, organized and directed the project in West Virginia. Dr. Robert Childers served as director for the project.

In August a three day inservice training session for principals, teachers, and aides was provided in Lexington, Kentucky. County coordinators also attended an inservice training session conducted at a later date.

Equipment and materials were provided by IBM and the Appalachian Regional Commission to all thirteen participating West Virginia schools for proper implementation of the program. All five counties agreed to use such equipment and materials solely for the use of the WTR program for three years; thereafter, the counties may use such equipment and materials as they wish.

The five West Virginia counties which participated in the project were Lincoln, McDowell, Mingo, Summers, and Wyoming. County coordinators for the project were: Danny Plumley (Lincoln), Larry Lane (McDowell), Ivadenne Hatfield (Mingo), Larry Deeds (Summers), and Loretta Rose & Pam Cook (Wyoming). In these five counties, thirty-one kindergartens

and twenty-one first grade classrooms conducted WTR instruction during the spring of 1989. Approximately one thousand students were thus exposed to WTR instruction in writing and reading.

Description of "Writing to Read"

Writing to Read is a computer-based instructional system designed to develop writing and reading skills of students in the primary grades. It is a multi-media educational system designed to teach children how to write what they can say and to read what they write. Using phonemic spelling, children are encouraged to focus on how individual letters represent sounds which produce words and how words form sentences. For one hour everyday, children come to a classroom dedicated as a WTR learning center where they use a variety of equipment, including computers with speech capabilities, and various educational materials organized into five learning stations. Teachers and aides are the educational managers, monitoring each student's progress and assisting with individual learning needs. WTR instruction usually is completed in a semester (eighteen weeks) (IBM Corporation).

Previous Validation

The effectiveness of the WTR program has been validated by many different sources. The following studies represent only a few of those sources.

The Educational Testing Service was commissioned by IBM

at the beginning of the National Demonstration Project to provide an evaluation of the effectiveness of the program. Their overall conclusion was that "Writing to Read is a powerful and effective educational program" (Educational Testing Service, 1984). For more specific conclusions, see Appendix 1.

Spillman and others (1986) found that writing samples from the students using the computer program contained twice as many communication units, a greater mean number of words per communication unit, and more advanced states of spelling generalizations than samples from those children who did not use the WTR program.

A study by Whitmer and Miller (1987) showed that a group of students using WTR had significantly higher gains in Reading Comprehension and Reading Total than a group which did not use the program.

The District of Columbia Public Schools utilized the WTR program with kindergarten students. Testing of control and treatment groups showed that WTR participating kindergarten students exhibited significant increases on reading and language subtests whereas control group students did not. WTR students also were at higher stages in the writing process than non-WTR students (Saunders and other, 1986).

WTR instruction has also proven successful in remediating reading problems in older students. Testing results indicated that the WTR program could increase vocabulary and total reading scores at a highly significant

level when compared to the scores of the control group (Thompson, 1985).

West Virginia Evaluation Design

Evaluation of the WTR program in West Virginia was conducted with kindergarten students only.

Thirty-one separate classrooms at thirteen schools in five counties were involved in the evaluation study as the treatment group, receiving WTR instruction. Twenty-seven classrooms in the five counties were involved as the control group, not receiving WTR instruction.

WTR kindergarten participating students received approximately eighteen weeks of WTR instruction during the spring of 1989.

Pre-testing was not conducted prior to instruction; therefore, after-treatment evaluation was used.

Kindergarten WTR classroom teachers were instructed to administer to all their students a spelling test (Appendix 2) and a writing test (Appendix 3) (WTR Evaluation Guidelines).

The spelling test consisted of ten simple words; classroom teachers graded the spelling tests.

The same writing prompt was used by all students in writing their stories. Writing samples were graded on a scale from one to six (Appendix 4) and were graded by the same person to insure grading consistency.

Reading achievement tests scores for control and treatment students were compared for McDowell County, the

only county which gave such tests.

Control and treatment group teachers were asked to fill out a questionnaire concerning the WTR program and other topics (Appendix 5 & 6).

County coordinators selected control groups of kindergarten students to match the treatment groups. They chose control groups which closely matched the treatment groups on the basis of:

1. Economic status (as determined by the % of free and reduced lunch applications).
2. The certification of the classroom teachers.
3. Historical past achievement of the schools.
4. Ratio of boys and girls.

The coordinators then randomly chose every fifth student in the control groups to be tested with the same instruments as the treatment groups. This systematic random method uses a set interval from a population list - in this case, the classroom register of students. This procedure is acceptable since the population list itself is essentially randomized (Lutz, 1983). It was not felt desirable by the coordinators to test all students in the control groups.

For the treatment groups, the systematic random method (every fifth student on the classroom register) was also used for selection of results to be compared to the control groups.

Evaluation results will be shown by:

1. Expression of results in terms of mean score, standard

deviation, and standard error of the mean for both spelling and writing results of both treatment and control groups.

2. Graphic representation of results comparing control and treatment group performance in both spelling and writing.
3. Reading score means, standard deviation, and standard error for McDowell County control and treatment groups.
4. Graphic representation of the aforementioned reading score means.
5. Compilation of questionnaire responses for both WTR and non-WTR teachers, whose students were involved in the testing activity for this study.

Limitations of the Study and other Comments

1. Only spelling and writing results were compared using treatment and control groups (exception - McDowell County reading results); reading results for all students might have been preferable, considering WTR is a reading and writing program. However, the involved counties did not test kindergarten students in reading (note exception above).
2. Only kindergarten students were used in the evaluation study.
3. Due to circumstances beyond their control, a few schools in one county did not have a total of eighteen weeks of WTR instruction, as is suggested to take place before evaluation occurs.

4. Several questions were raised concerning the correct spelling of words - whether correct phonetically-spelled words should be counted as correct on the spelling test. If this were permitted, many more words would have been counted as correct. However, this was not allowed. One of the oftentimes perceived shortcomings of the WTR Program is whether students who use it will learn to spell correctly using standard English spelling; more specifically, are they able to switch from phonetic spelling to standard English spelling. Thus, this evaluation, like the National Evaluation, attempts to focus in on correct standard spelling.
5. Formal kindergarten achievement tests are often viewed in a skeptical light and thus are not included in the formal evaluation results of many programs (such as ESSIA Chapter I and the WV Steps State Testing Program). Therefore, the reading scores of McDowell County (taken from the Comprehensive Test of Basic Skills, Level A, Form U) must be considered in such a context.
6. Each county coordinator chose the control subjects in their county; a more stringent and more controlled method of selection might have been used.

Research Statistical Methods and Results

Tests results were analyzed using the Statistical Analysis System (SAS) computer program on an IBM 50Z computer at Marshall University under the direction of Dr. Ermel

Stepp.

Results were derived in the following areas:

1. The grand mean, standard deviation, and standard error of the mean for spelling and writing for the sample control groups in all counties; the same results were obtained for the sample treatment groups in all counties.
2. The mean, standard deviation, and standard error of the mean for spelling and writing for each county.
3. The mean, standard deviation, and standard error of the mean for reading scores (visual recognition of the alphabet and sound recognition of the alphabet) for McDowell County. A t-test was used to compare treatment and control group scores.

The following tables demonstrate the spelling and writing results for treatment and control students (using a twenty percent sample from each county of each group). The treatment group received the WTR instruction; the control group did not. The mean is the average of the test scores. For spelling score limits were from 0-10; in writing, from 0-6. The standard deviation is the measure of the average distance of each of the scores from the mean. The standard error of the mean is an estimate of the reliability of the test score; it enables one to estimate an interval of scores within which the individual's "true" score will fall. The number shown on the table must be further computed to

determine reliability.

Table I

Treatment Group

Variable	#	Boys	Girls	Mean	Std Dev	Std Error
Spelling	107	65	42	3.10	2.50	0.24
Writing	107	65	42	1.73	1.20	0.12

Control Group

Variable	#	Boys	Girls	Mean	Std Dev	Std Error
Spelling	107	52	55	1.06	1.46	0.14
Writing	107	52	55	1.07	0.65	0.06

Comparing the mean differences between treatment and control groups, one finds that the difference is highly significant in a statistical sense at the .05 level (there is less than five chances in 100 that it would have happened by chance.

Table II

County by County Analysis

County	Variable	Treat/Control	#	Mean	Std Dev
Lincoln	Spelling	Treatment	20	2.85	1.98
	Spelling	Control	20	0.65	1.08
	Writing	Treatment	20	1.30	0.65
	Writing	Control	20	0.95	0.22

McDowell	Spelling	Treatment	22	3.32	2.93
	Spelling	Control	22	1.73	1.98
	Writing	Treatment	22	2.09	1.44
	Writing	Control	22	1.36	0.79
Mingo	Spelling	Treatment	27	2.85	1.81
	Spelling	Control	27	0.89	1.22
	Writing	Treatment	27	1.59	0.97
	Writing	Control	27	0.93	0.38
Summers	Spelling	Treatment	8	2.38	1.69
	Spelling	Control	8	1.38	1.60
	Writing	Treatment	8	1.50	1.41
	Writing	Control	8	1.13	1.55
Wyoming	Spelling	Treatment	30	3.53	3.14
	Spelling	Control	30	0.90	1.30
	Writing	Treatment	30	1.93	1.36
	Writing	Control	30	1.03	0.49

As can be readily observed, all treatment groups in each subject in each county scored higher than the control groups in the same.

Table III

McDowell Reading

Treat/Control	#	Visual Rec Mean	Sound Rec Mean
Treatment	22	68.2	56.6
Control	22	73.2	54.2

These results were not statistically significant at the .05 level; therefore, WTR instruction seemed to have made little difference in the reading areas tested.

Graphic representations of the above tables can be found in Appendix B.

Other Evaluation

Often the success of a program is more than the total of test scores. Participants' opinions are critical assessors of program competence; therefore, such opinions were sought and compiled to gain additional evaluation information..

Teacher questionnaires for treatment and control teachers were administered at kindergarten level.

Selected questions, # of responses, and percentages are shown below by county for the kindergarten treatment teachers

1. How do you feel about "Writing to Read"?

	L	Mc	Mi	Su	Wy	#	%
Like it very much	2	2	7	1	6	18	60
Like it	2	4	1	0	2	9	30
Not sure	1	1	0	1	0	3	10
Disklike it	0	0	0	0	0	0	0
Dislike it very much	0	0	0	0	0	0	0

2. How would you rate its overall effectiveness?

	L	Mc	Mi	Su	Wy	#	%
Very effective	2	1	5	1	6	15	50
Effective	2	5	3	0	2	12	40
Not sure	1	1	0	1	0	3	10
Ineffective	0	0	0	0	0	0	0
Very ineffective	0	0	0	0	0	0	0

3. How do you think the progress in reading of most of your students compares to the progress in reading of your students in previous years.

	L	Mc	Mi	Su	Wy	#	%
Reading better	3	3	7	1	6	20	67
Reading about same	2	0	1	1	1	5	17
Not reading as well	0	1	0	0	0	1	3
First year teaching K	0	3	0	0	1	4	13
No opinion	0	0	0	0	0	0	0

4. How do you think the progress in writing of most of your students compares to the progress in writing of your students in previous years.

	L	Mc	Mi	Su	Wy	#	%
Writing better	4	3	6	2	6	17	65
Writing about same	1	0	2	0	0	3	12
Not writing as well	0	0	0	0	0	0	0
First year teaching K	0	3	0	0	1	4	15
No opinion	0	1	0	0	1	2	8

5. How does the amount of time you spend on reading compare with the amount you spent in previous years?

	L	Mc	Mi	Su	Wy	#	%
Spending more time	4	2	8	2	6	22	74
Spending about same	1	2	0	0	1	4	12
Spending less time	0	0	0	0	0	0	0
Not taught at K before	0	1	0	0	1	2	7
First year at K level	0	2	0	0	0	2	7

6. How does the amount of time you spend on writing compare with the amount you spent in previous years?

	L	Mc	Mi	Su	Wy	#	%
Spending more time	5	4	7	2	6	24	86
Spending about same	0	0	0	0	0	0	0
Spending less time	0	0	0	0	0	0	0
Not taught at K before	0	1	0	0	1	2	7
First year at K level	0	2	0	0	0	2	7

7. How would you rate the effectiveness of "Writing to Read" for the following groups of students?

Above Average

	L	Mc	Mi	Su	Wy	#	%
Very effective	2	5	5	1	7	20	71
Effective	2	1	1	1	1	6	22
Not sure	1	1	0	0	0	2	7
Ineffective	0	0	0	0	0	0	0
Very ineffective	0	0	0	0	0	0	0

Average

	L	Mc	Mi	Su	Wy	#	%
Very effective	1	3	5	1	4	14	48
Effective	4	4	2	0	4	14	48
Not sure	0	0	0	1	0	1	4
Ineffective	0	0	0	0	0	0	0
Very ineffective	0	0	0	0	0	0	0

Below Average

	L	Mc	Mi	Su	Wy	#	%
Very effective	0	1	4	1	3	9	32
Effective	2	3	1	0	2	8	29
Not sure	3	2	2	0	3	10	36
Ineffective	0	0	1	0	0	1	3
Very ineffective	0	0	0	0	0	0	0

8. What kind of feedback have you had from parents about "Writing to Read"?

	L	Mc	Mi	Su	Wy	#	%
Very positive	1	1	6	1	2	11	39
Positive	3	3	1	1	6	14	50
No feedback	1	2	0	0	0	3	11
Negative	0	0	0	0	0	0	0
Very negative	0	0	0	0	0	0	0

Selected responses, # of responses, and percentages are shown below by county for the kindergarten control teachers.

1. How do you feel about your overall reading program?

	L	Mc	Mi	Su	Wy	#	%
Like it very much	0	0	0	1	1	2	8
Like it	3	3	6	2	6	20	80
Not sure	1	0	0	0	0	1	4
Dislike it	1	1	0	0	0	2	8
Dislike it very much	0	0	0	0	0	0	0

2. How would you rate its overall effectiveness?

	L	Mc	Mi	Su	Wy	#	%
Very effective	1	0	0	1	1	3	12
Effective	4	4	6	2	6	22	88
No sure	0	0	0	0	0	0	0
Ineffective	0	0	0	0	0	0	0
Very ineffective	0	0	0	0	0	0	0

3. How do you think the progress in reading of most of your students compares to the progress in reading of your students in previous years?

	L	Mc	Mi	Su	Wy	#	%
Reading better	0	1	1	0	0	2	8
Reading about same	4	1	3	1	6	15	58
Not reading as well	1	1	2	1	1	6	23
First year at K level	0	2	0	0	0	2	8
Have no opinion	0	0	0	1	0	1	3

4. How do you think the progress in writing of most of your students compares to the progress in writing of your students in previous years?

	L	Mc	Mi	Su	Wy	#	%
Writing better	0	0	0	0	0	0	0
Writing about same	5	2	5	3	6	21	84
Not writing as well	0	1	1	0	0	2	8
First year at K level	0	2	0	0	0	2	9
Have no opinion	0	0	0	0	0	0	0

5. How does the amount of time you spend on reading compare with the amount you spent in previous years?

	L	Mc	Mi	Su	Wy	#	%
Spending more time	1	2	1	0	1	4	15
Spending about same	4	1	5	3	6	19	73
Spending less time	0	0	0	0	0	0	0
Not taught at K before	0	0	0	0	1	1	4
First year at K	0	2	0	0	0	2	8

6. How does the amount of time you spend on writing compare with the amount you spent in previous years (creative, not handwriting)?

	L	Mc	Mi	Su	Wy	#	%
Spending more time	1	0	1	0	1	3	12
Spending about same	4	2	4	3	4	17	65
Spending less time	0	0	1	0	0	1	3
Not taught at K before	0	1	0	0	2	3	12
First year at K level	0	2	0	0	0	2	8

7. How would you rate the effectiveness of your overall reading program for the following groups of students?

Above Average

	L	Mc	Mi	Su	Wy	#	%
Very effective	1	1	2	0	3	7	27
Effective	3	4	1	3	4	15	59
Not sure	0	0	0	0	0	0	0
Ineffective	1	0	3	0	0	4	15
Very ineffective	0	0	0	0	0	0	0

Average

	L	Mc	Mi	Su	Wy	#	%
Very effective	1	1	0	1	1	4	15
Effective	4	4	6	2	6	22	85
Not sure	0	0	0	0	0	0	0
Ineffective	0	0	0	0	0	0	0
Very ineffective	0	0	0	0	0	0	0

Below Average

	L	Mc	Mi	Su	Wy	#	%
Very effective	0	0	0	0	0	0	0
Effective	0	0	1	1	3	5	20
Not sure	1	0	2	1	4	4	15
Ineffective	4	5	3	2	2	16	61
Very ineffective	0	0	0	0	1	1	4

8. What kind of feedback have you had from parents about your program?

	L	Mc	Mi	Su	Wy	#	%
Very positive	1	0	0	1	2	4	17
Positive	3	2	1	0	3	9	38
No feedback	0	3	3	2	2	10	42
Negative	1	0	0	0	0	1	3
Very negative	0	0	0	0	0	0	0

In comparing the results of the questionnaire responses of the WTR treatment teachers and the control teachers, a clear trend becomes apparent. In every category, the treatment teachers rated the WTR program as higher or more effective than the control teachers rated their reading program. So it would seem that WTR teachers are more satisfied with WTR than control teachers are satisfied with their reading programs.

In summary, the "Writing to Read" Program instruction has proven itself effective in the areas of spelling and writing for kindergarten students in the five West Virginia counties taking part in the project.

APPENDICES

WRITING TO READ VALIDATION

Educational Testing Service of Princeton, New Jersey, was commissioned by IBM at the beginning of the National Demonstration Project to provide an evaluation of the effectiveness of the Writing to Read system. Their findings were released in July of 1984.

Overall Conclusion:		Writing to Read is a powerful and effective educational program.
Conclusion 1	:	Writing to Read works as an instructional system.
Conclusion 2	:	Kindergarten and first-grade children demonstrate the attainment of progressively complex writing skills with Writing to Read.
Conclusion 3	:	Writing to Read children in kindergarten and first grade write significantly better than comparison groups.
Conclusion 4	:	Kindergarten Writing to Read students gain a significant advantage in reading ability over non-Writing to Read students.
Conclusion 5	:	Kindergarten and first-grade Writing To Read students progressed faster than the national norm comparison groups on standardized reading tests.
Conclusion 6	:	Writing to Read students perform as well as non-Writing to Read students on spelling.
Conclusion 7	:	Teachers of Writing to Read children report greater progress of their children in writing and reading than teachers of non-Writing to Read students report.
Conclusion 8	:	Parents of Writing to Read children report greater progress of their children in writing and reading as compared to parents of non-Writing to Read children.

Appendix B. Spelling Tests Used in the National Evaluation of WTR

The teacher should see that each child has a pencil and a piece of paper and then read each of ten sentences slowly, twice, like this:

"He is six *feet* tall. Write the word *feet*. I'll say it again.

He is six *feet* tall. Write the word *feet*."

The words and sentences used are given below:

Kindergarten

1. He is six *feet* tall.
2. We took a *ride* on the bus.
3. She *made* sandwiches for lunch.
4. The girl *was* tired.
5. I *cut* my finger.
6. Going to the circus was *fun*.
7. We saw a *big* dog.
8. I have a bike at *home*.
9. The boy said *"yes."*
10. I can write my *name*.

Appendix A. Instructions, Directions, and Criteria

Instructions to Teachers for Collecting Writing Samples

- ***Date of assessment.*** Writing samples should be collected near the end of the term and after at least 18 weeks of instruction in WTR and any non-WTR classes.
- ***Materials.*** Pupils should use the pencils that they normally use for writing.
- ***Length of time.*** After you have given the directions and answered questions, the children are to be given 30 minutes to write one copy of their story.
- ***Teacher assistance.*** Once you have read all the directions for writing the story and answered any questions, please do not assist the pupils in writing their stories, spelling words, and so on.
- ***Directions.*** After you have distributed pencils and paper, please tell the children to write their names at the top of their papers. Then read:

  Today you will be writing a story all by yourself. I can't help you but I know you will do the best you can. I'm going to read a little story first. Listen.

  Once upon a time when a little boy and a little girl were walking home from school, they found two magic hats. Because the hats were magic, when they put the hats on they could do anything they wished. They could fly up in the sky; they could be clowns in the circus; they could go to the moon. They could even eat all the ice cream in the world. They had a wonderful time.

  Now...just think what YOU could do if YOU found a magic hat. Let's write a make-believe story about what you would do if you found a magic hat. Remember, you can do or be anything you wish. Start your story like this: One day I found a magic hat.

  [Print the following sentence on the board:]

  One day I found a magic hat.

  [The children should now begin. The children should be encouraged to write and to do the best they can. At the end of 30 minutes, ask the children to turn in their stories.]

Criteria for Scoring Kindergarten Writing Samples

Level	Explanation
6	Ideas are very well developed and expressed. The writing has a fully developed structure, which may or may not be narrative. The ideas are connected logically and they are well organized. There is good sentence variety and expression.
5	Ideas are fairly well developed and expressed. The writing has a discernible structure. The ideas are connected logically, but they are not so fully developed or so well organized as score 6 papers.
4	Ideas are only loosely connected or not developed. The structure may be disjointed, but what is provided is clearly more than a list. The ideas are relevant but are not developed or expressed well. The sentence structure may be repetitious.
3	Ideas lack development. The writing often merely lists ideas, usually a series of wishes. The phrasing and the sentence structure are repetitious.
2	Ideas have little or no relationship to a magic hat. An idea or a list is provided that is not connected logically to a magic hat or magic. Minimal paper.
1	Lack of ideas. All that is presented is "One day I found a magic hat" or that sentence appears along with other words or phrases the child is seeing displayed in the classroom.
UN	Not decipherable.
BL	Blank or completely nonverbal response.

Appendix C. Teacher Questionnaires

Writing to Read Teacher Questionnaire

Name _____ School _____

1. How many students are in your class? K ____ 1 ____ 2 ____ Other ____

2. How many years of teaching experience have you had, including this year?
   - 1 year or less ____
   - 2 – 4 years ____
   - 5 – 9 years ____
   - 10 – 14 years ____
   - 15 – 19 years ____
   - 20 years or more ____

3. What reading program(s) do you use with Writing to Read? (may list more than one)

   _____

   _____

   _____

4. How long have you been using Writing to Read?
   - This is the first year ____
   - This is the second year ____
   - Used for more than 2 years ____

5. How do you feel about Writing to Read?
   - Like it very much ____
   - Like it ____
   - Not sure ____
   - Dislike it ____
   - Dislike it very much ____

6. How would you rate its overall effectiveness?
   - Very effective ____
   - Effective ____
   - Not sure ____
   - Ineffective ____
   - Very ineffective ____

7. How do you think the progress in *reading* of *most* of your students compares to the progress in *reading* of your students in previous years?
   - Are reading better than students in previous classes ____
   - Are reading about the same as students in previous classes ____
   - Are not reading as well as students in previous classes ____
   - This is my first year teaching at this grade level ____
   - Have no opinion ____

8. How do you think the progress in *writing* of *most* of your students compares to the progress in *writing* of your students in previous years?
   - Are writing better than students in previous classes ____
   - Are writing about the same as students in previous classes ____
   - Are not writing as well as students in previous classes ____
   - This is my first year teaching at this grade level ____
   - Have no opinion ____

9. How does the amount of time you spend on reading compare with the amount you spent in previous years?

Am spending more time on reading than in previous years ____
Am spending about the same amount of time as in previous years ____
Am spending less time on reading than in previous years ____
Not applicable (not taught at this grade level) ____
Not applicable (my first year teaching at this grade level) ____

10. How does the amount of time you spend on writing compare with the amount you spent in previous years? (Original rather than handwriting)

Am spending more time on writing than in previous years ____
Am spending about the same amount of time as in previous years ____
Am spending less time on writing than in previous years ____
Not applicable (not taught at this grade level) ____
Not applicable (my first year teaching at this grade level) ____

11. How would you rate the effectiveness of Writing to Read for the following groups of children? (Please check one in each column)

Above Average		Average		Below Average	
Very effective	____	Very effective	____	Very effective	____
Effective	____	Effective	____	Effective	____
Not sure	____	Not sure	____	Not sure	____
Ineffective	____	Ineffective	____	Ineffective	____
Very ineffective	____	Very ineffective	____	Very ineffective	____

12. What kind of feedback have you had from parents about Writing to Read?

Very positive ____
Positive ____
Have had no feedback ____
Negative ____
Very negative ____

How much time does a typical child in your class spend in each of the following types of activities? (in the regular classroom)

Note: Enter 1 if a *great deal* of time
Enter 2 if *some* time
Enter 3 if *little* or *no* time
Enter 4 if not applicable

13. Reading aloud ____
14. Reading silently ____
15. Creative writing ____
16. Developing a sight vocabulary ____
17. Learning word meanings ____
18. Phonic and/or structural analysis ____
19. Penmanship ____

We are interested in your thoughts about the reading and writing skills of the children and the use of computers in education. Please check whether you agree or disagree with the following statements.

	Agree	*Disagree*
20. It is important today that children learn about computers and how to use them.	____	____
21. The children are progressing as well as expected.	____	____
22. Money being spent on computers should be spent on other things.	____	____
23. Too much time is spent on Writing to Read.	____	____
24. Children this age are too young to learn by computers.	____	____
25. I hope our school will continue to use Writing to Read next year.	____	____
26. Our school should emphasize reading skills more than they do at present.	____	____
27. Our school should emphasize writing skills more than they do at present.	____	____

Teacher Questionnaire (non-WTR)

Name _____ School _____

1. How many students are in your class? K ____ 1 ____ 2 ____ Other ____

2. How many years of teaching experience have you had, including this year?

1 year or less	____
2 – 4 years	____
5 – 9 years	____
10 – 14 years	____
15 – 19 years	____
20 years or more	____

3. What reading program(s) do you use? (More than one may be listed)

_____

_____

_____

4. How long have you been using the(se) reading program(s)?

This is the first year	____
This is the second year	____
Used for more than 2 years	____

5. How do you feel about your overall reading program?

Like it very much	____
Like it	____
Not sure	____
Dislike it	____
Dislike it very much	____

6. How would you rate its overall effectiveness?

Very effective	____
Effective	____
Not sure	____
Ineffective	____
Very ineffective	____

7. How do you think the progress in *reading* of *most* of your students compares to the progress in *reading* of your students in previous years?

Are reading better than students in previous classes	____
Are reading about the same as students in previous classes	____
Are not reading as well as students in previous classes	____
This is my first year teaching at this grade level	____
Have no opinion	____

8. How do you think the progress in *writing* of *most* of your students compares to the progress in *writing* of your students in previous years?

Are writing better than students in previous classes	____
Are writing about the same as students in previous classes	____
Are not writing as well as students in previous classes	____
This is my first year teaching at this grade level	____
Have no opinion	____

9. How does the amount of time you spend on reading compare with the amount you spent in previous years?

Am spending more time on reading than in previous years	____
Am spending about the same amount of time as in previous years	____
Am spending less time on reading than in previous years	____
Not applicable (not taught at this grade level)	____
Not applicable (my first year teaching at this grade level)	____

10. How does the amount of time you spend on writing compare with the amount you spent in previous years? (Original rather than handwriting)

Am spending more time on writing than in previous years	____
Am spending about the same amount of time as in previous years	____
Am spending less time on writing than in previous years	____
Not applicable (not taught at this grade level)	____
Not applicable (my first year teaching at this grade level)	____

11. How would you rate the effectiveness of your overall reading program for the following groups of children? (Please check one in each column)

Above Average		Average		Below Average	
Very effective	____	Very effective	____	Very effective	____
Effective	____	Effective	____	Effective	____
Not sure	____	Not sure	____	Not sure	____
Ineffective	____	Ineffective	____	Ineffective	____
Very ineffective	____	Very ineffective	____	Very ineffective	____

12. What kind of feedback have you had from parents about your reading program?

Very positive	____
Positive	____
Have had no feedback	____
Negative	____
Very negative	____

How much time does a typical child in your class spend in each of the following types of activities?

Note: Enter 1 if a *great deal* of time
Enter 2 if *some* time
Enter 3 if *little* or *no* time
Enter 4 if not applicable

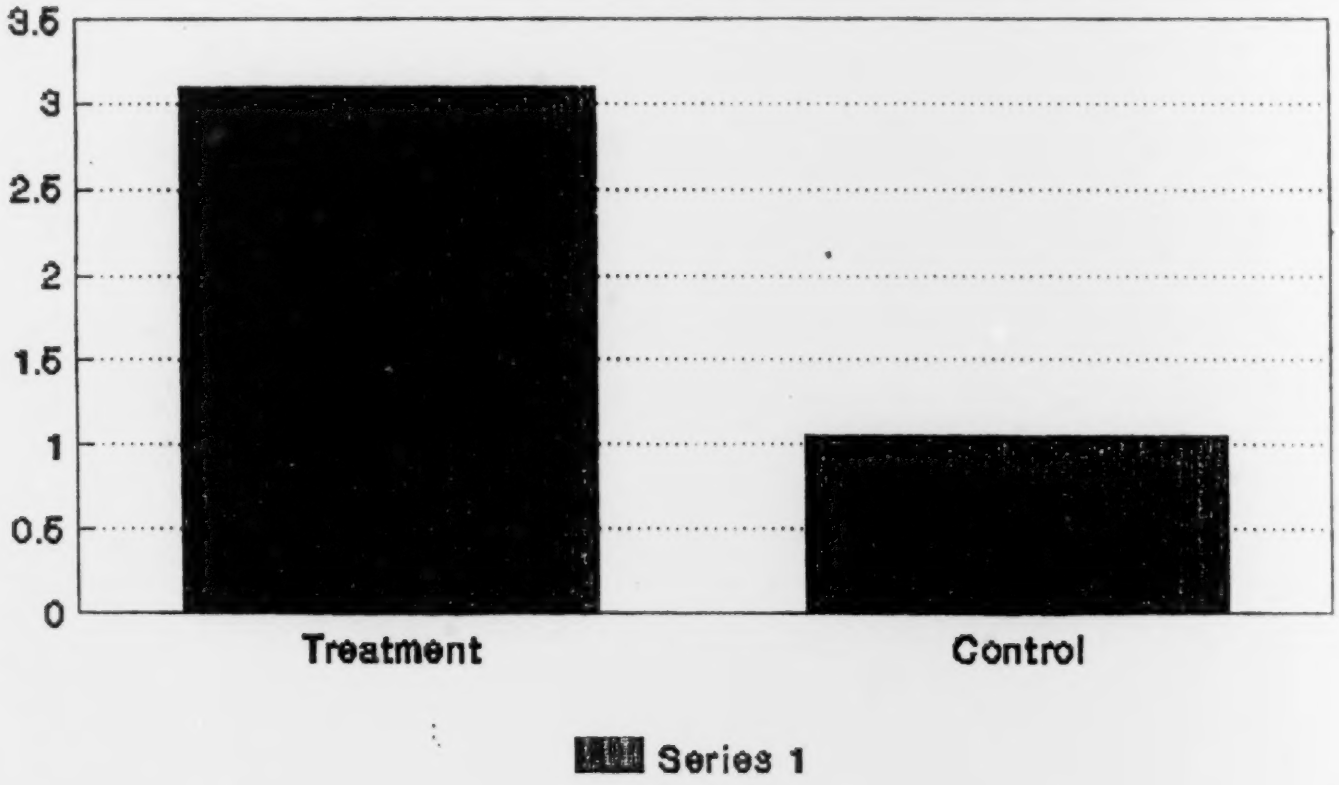
13. Reading aloud ____
14. Reading silently ____
15. Creative writing ____
16. Developing a sight vocabulary ____
17. Learning word meanings ____
18. Phonic and/or structural analysis ____
19. Penmanship ____

We are interested in your thoughts about the reading and writing skills of the children and the use of computers in education. Please check whether you agree or disagree with the following statements.

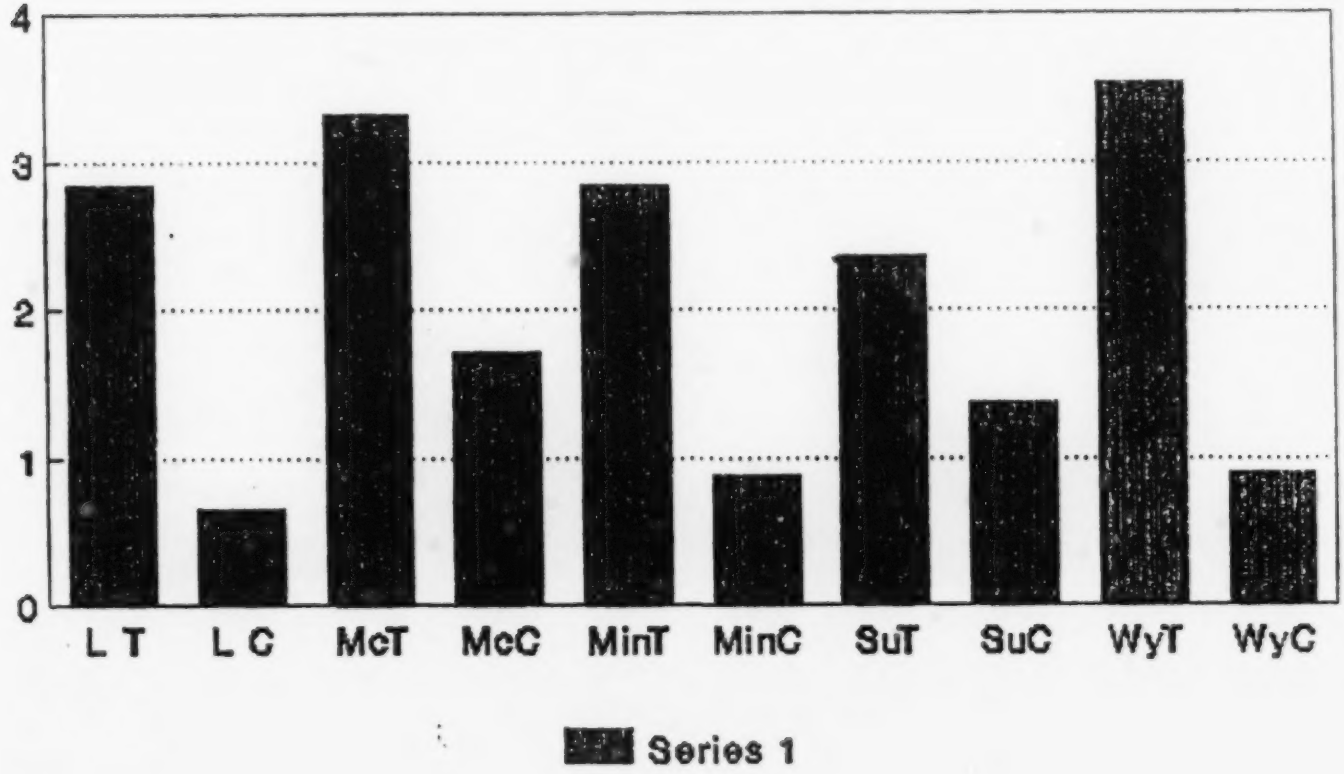
	Agree	*Disagree*
20. It is important today that children learn about computers and how to use them.	____	____
21. The children are progressing as well as expected.	____	____
22. Money being spent on computers should be spent on other things.	____	____
23. Too much time is spent on our reading program.	____	____
24. Children this age are too young to learn by computers.	____	____
25. I hope our school will continue to use the reading program we are using this year.	____	____
26. Our school should emphasize reading skills more than they do at present.	____	____
27. Our school should emphasize writing skills more than they do at present.	____	____

Appendix 7

Spelling Results
Total for All Counties

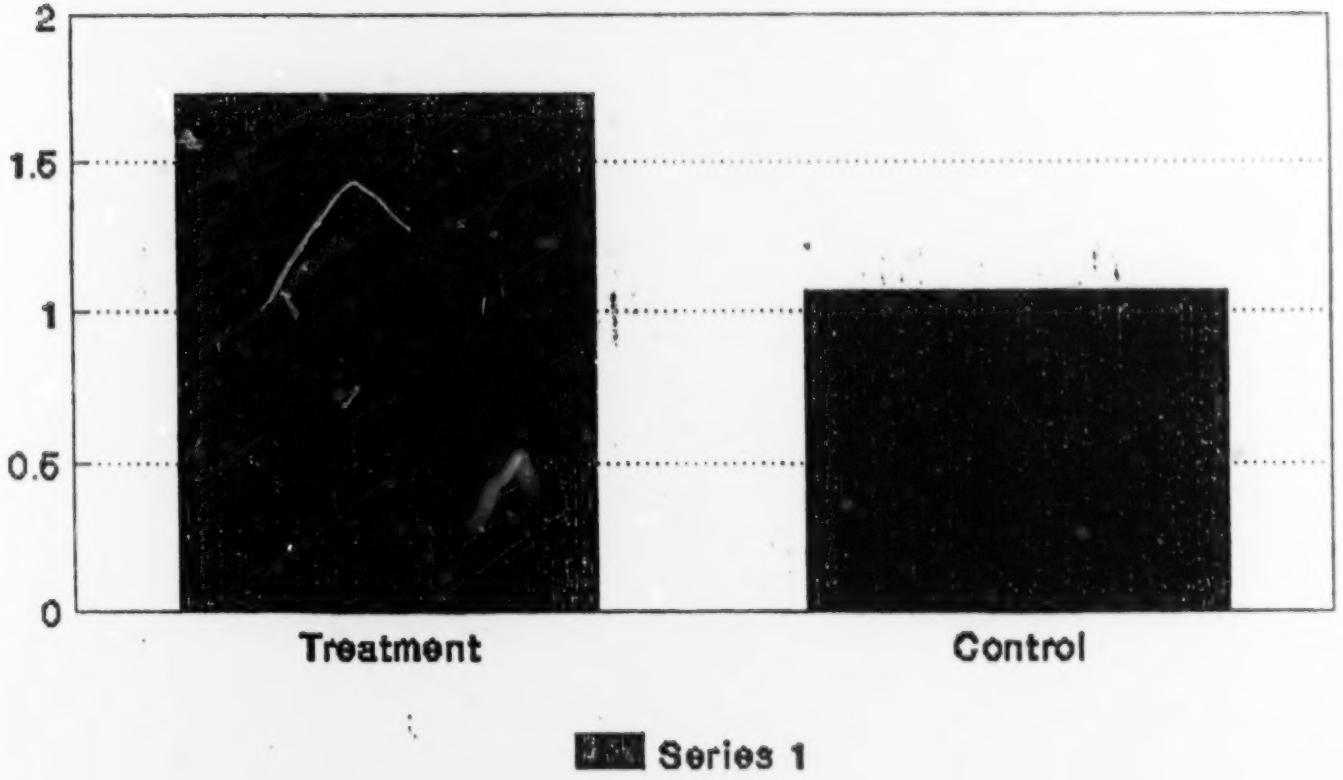


Spelling
County by County Analysis

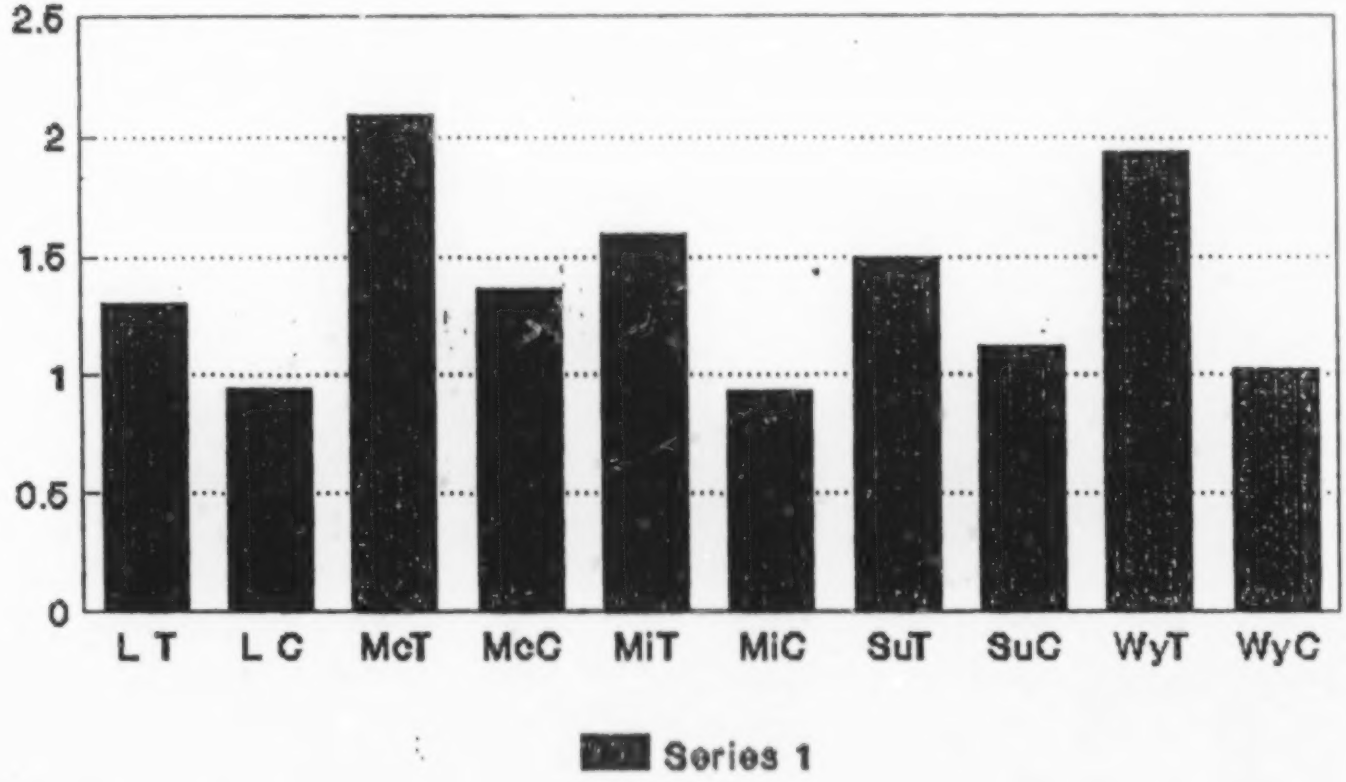


Treatment and Control Groups

Writing Results
Total for All Counties

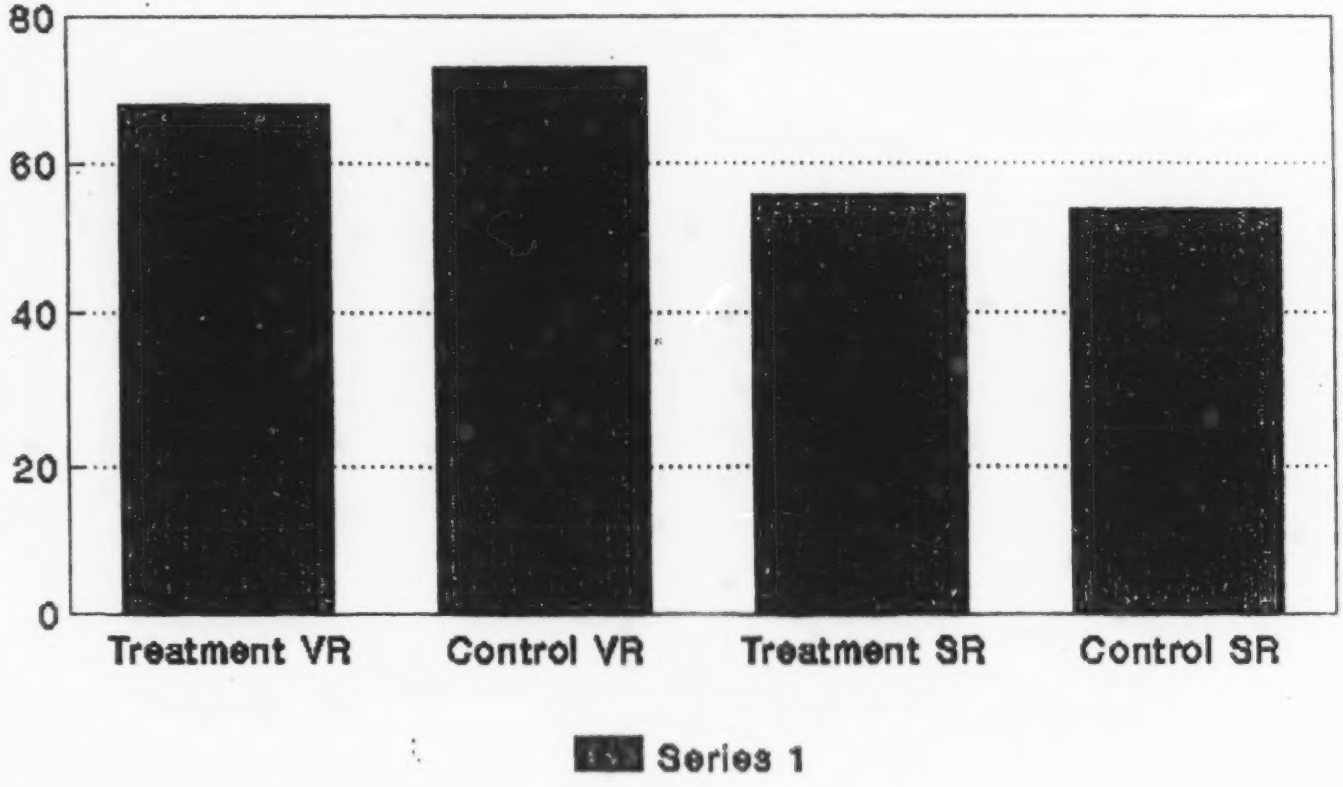


Writing
County by County Analysis



Treatment and Control Groups

Reading Results
McDowell County



Visual and Sound Recognition of Alphabet